

ABSTRACT

An ionization chamber of an analytical apparatus (10) in which high concentration test sample ions are evaporated is provided with an ion introduction control means (8) to control the quantity of the test sample ions introduced to an ion attracting electrode (9). Therefore, an analytical apparatus can be provided that is capable of substantially simultaneous mass spectrometry and absorption, emission, and scattering spectroscopy. The apparatus also includes: a low temperature bath (106) which cools the test sample solution before it is introduced to the sprayer (104); and a cooling gas introduction tube (108), constructed separately from the sprayer, which cools the sprayer and the test sample solution introduced to the sprayer (104). The inclusion enables effective restriction of test sample heating upon high voltage application. Mass spectrometry and absorption, emission, and scattering spectroscopy can be substantially simultaneously carried out even when the test sample used is stable only at extremely low temperatures.